

**Principles of Statistics (1)**  
**English section**  
**Group (A)**

**Sheet 2**

1. Twenty five people took a test. The points scored are grouped in the frequency table below.

Points Scored	Number of People
1 to less than 6	1
6 to less than 11	2
11 to less than 16	5
16 to less than 21	7
21 to less than 26	8
26 to less than 30	2

- (a) Draw this data using the appropriate graph.  
(b) Find the cumulative distribution for this data.

2- The pupils in Mr. Middleton's class took a Math test and got scores out of 10, which are listed below:

3   7   6   2   5   9   10   8   7   1  
8   4   3   5   6   7   8   7   6   5  
3   6   9   8   7   5   9   6   7   8

Put this data in a frequency table. Then, calculate the percentage of students who passed this exam.

3- Mr. Rafiq runs a video library. Over a period of 3 days he notes how many videos have been borrowed during each hour. His records are shown below:

1   1   2   1   3   3   4   1   4   1  
2   3   3   2   4   2   3   2   3   2  
1   1   3   4   2   4   3   3   2   3

Mr. Rafiq decides to put the data in a table so he can

- (a) Calculate the relative and the percentage frequencies.  
(b) Calculate the cumulative frequency.  
(c) Represent the data graphically.  
(d) Identify the *largest* number of videos hired in any hour.  
(e) Identify the *least* number of videos hired in any hour.  
(f) Identify the *most common* number of videos hired in any hour.

4- A train company keeps a record of how many trains are late each day. The data for January and February are shown in the table below:

January	February
1 0 2 4 3 1 2 4	5 1 4 4 2 4 3
5 1 2 4 5 4 3 0	1 5 3 3 2 3 5
1 4 1 3 2 1 2 3	5 4 4 4 4 5 4
4 5 5 0 1 2 2	4 3 5 3 5 5 4

- In which month was a better service provided to passengers?
- How many days had 4 or more trains late (over both months together)?
- Represent the data for each month graphically.

5- The following table represents the frequency distribution of the weekly salary (in dollars) for a sample of workers:

Weekly salary	4-	6-	8-	10-	12-14	Total
Number of workers	10	12	25	20	18	85

- Plot this data using the histogram and the polygon charts.
- Find the number of the workers that have a weekly salary less than 10 dollars.
- Find the percentage of the workers that have a weekly salary at least 8 dollars.
- Use the table(s) in (d) to find the salary that 26% of workers have.

6- The following data represents the number of children in the household:

3 1 3 2 0 1 1 2 0 1  
1 2 1 1 0 0 1 0 1 1

- Calculate the ratio of the households having a child to those who have 3 children. Interpret.
- Calculate the percentage of the households having at most a child.
- Construct an appropriate frequency table for this data to calculate the percentage of the households having at most a child. Compare your answer with the value you obtained in (b).
- Use the appropriate graph to represent the data.
- Find the ascending and the descending cumulative distributions.

7. The number of items rejected daily by a manufacturer because of defects was recorded for the past 30 days. The results are as follows:

4 9 13 7 5 8 12 15 5 7 3 8 15 17 19  
6 4 10 8 22 16 9 5 3 9 19 14 13 18 7

Construct a frequency distribution table and represent the data by an appropriate graph.

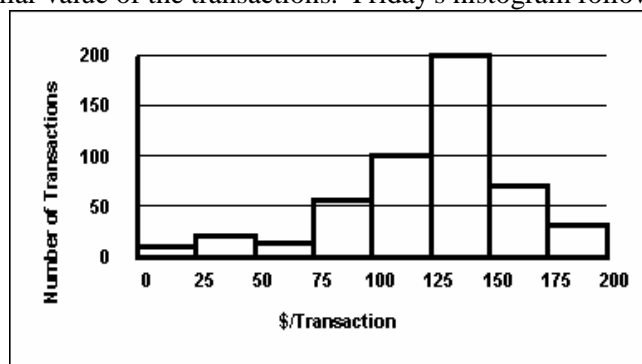
8. The Grades of 20 students in an exam was recorded as follows:

A B C A A A B C C C  
B A A B B B B C A B

1. Construct a frequency distribution table
2. Represent the data by an appropriate graph
3. What percentage of students got more than B grade?
4. What percentage of students got less than or equal B grade?
5. what percentage of students got A grade?

## Choose

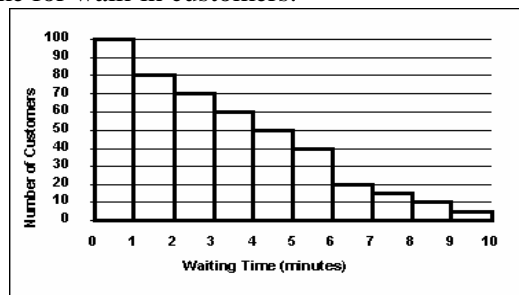
1. Each day, the office staff at Oasis Quick Shop prepares a frequency distribution and a histogram of sales transactions by dollar value of the transactions. Friday's histogram follows.



On Friday, the approximate number of sales transactions between \$100 and \$150 was \_\_\_\_\_.

- a) 100
- b) 200
- c) 300
- d) 400

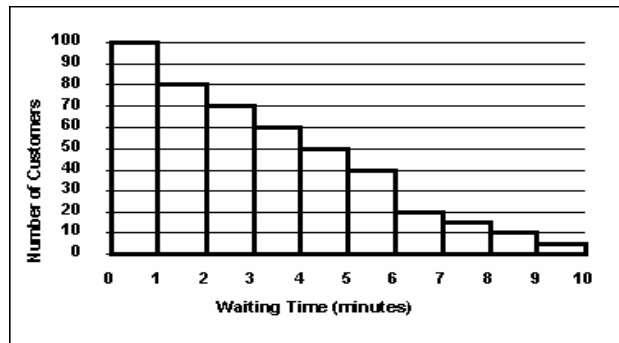
2. The staff of Mr. Wayne Wertz, VP of Operations at Portland Peoples Bank, prepared a frequency histogram of waiting time for walk-in customers.



Approximately \_\_\_\_\_ walk-in customers waited less than 2 minutes.

- a) 20
- b) 30
- c) 100
- d) 180

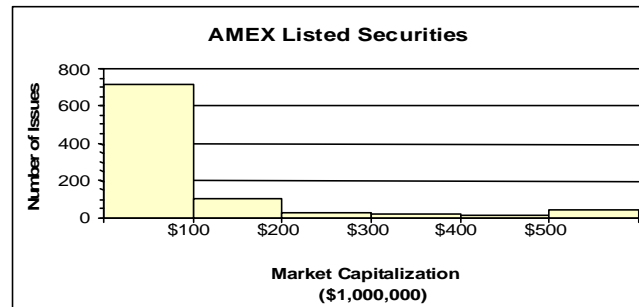
3. The staff of Mr. Wayne Wertz, VP of Operations at Portland Peoples Bank, prepared a frequency histogram of waiting time for walk-in customers.



Approximately \_\_\_\_ walk-in customers waited at least 7 minutes.

- a) 20
- b) 30
- c) 100
- d) 180
- e) 200

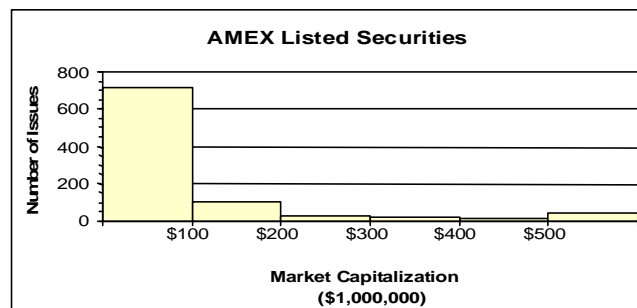
4. The staff of Ms. Tamara Hill, VP of Technical Analysis at Blue Sky Brokerage, prepared a frequency histogram of market capitalization of the 937 corporations listed on the American Stock Exchange in January 2003.



Approximately \_\_\_\_ corporations had capitalization at least \$200,000,000.

- a) 50
- b) 100
- c) 700
- d) 800

5. The staff of Ms. Tamara Hill, VP of Technical Analysis at Blue Sky Brokerage, prepared a frequency histogram of market capitalization of the 937 corporations listed on the American Stock Exchange in January 2003.



Approximately \_\_\_\_ corporations had capitalizations of less than \$200,000,000.

- a) 50
- b) 100
- c) 700
- d) 800

6. One rule that must always be followed in constructing frequency distributions is that \_\_\_\_\_.

- a) the number of classes must be less than 10
- b) each data point can only fall into one class
- c) the width of each class is equal to the range
- d) the number of intervals must be an odd number

7. Consider the following frequency distribution:

Class Interval	Frequency
10-under 20	15
20-under 30	25
30-under 40	10

What is the relative frequency of the first class?

- a) 0.15
- b) 0.30
- c) 0.10
- d) none of the above

8. Consider the following frequency distribution:

Class Interval	Frequency
10-under 20	15
20-under 30	25
30-under 40	10

What is the ascending cumulative frequency of the second class interval?

- a) 25
- b) 40
- c) 15
- d) 50

9. The ascending cumulative frequency for a class is 27. The cumulative frequency for the next (non-empty) class will be \_\_\_\_\_.

- a) less than 27
- b) equal to 27
- c) greater than 27
- d) 27 minus the next class frequency